AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-20 – canceled

21. (currently amended) A method of measuring slope efficiency of a semiconductor diode laser device, the method comprising the steps of:

altering the magnitude of current driving the semiconductor diode laser device;

tapping a predetermined percentage of electromagnetic radiation generated by stimulated emission in response to the laser device being driven by the current;

measuring the power of the tapped predetermined percentage of electromagnetic radiation;

controlling the attenuation of untapped electromagnetic radiation; and

calculating the slope efficiency based on the magnitude of the alteration of the current and the measured power of the tapped predetermined percentage of the electromagnetic radiation.

22. (previously presented) A method as claimed in claim 21, wherein the current is a modulation current signal having a magnitude that is altered at least about 5% of the magnitude of the modulation current signal current prior to alteration thereof.

23. (previously presented) A method as claimed in claim 22, wherein the magnitude of the modulation current signal is altered by between about 5% and about 10% of the magnitude of the modulation current signal prior to the alteration thereof.

24. (previously presented) A method as claimed in claim 21, wherein the current includes data modulating the current at a data rate in excess of a predetermined rate and the altering of the current is with a sinusoidal component having frequency components only outside the data rate.

25. (currently amended) A method as claimed in claim 21, wherein the attenuation of the untapped electromagnetic magnetic radiation is optical, and further comprising the steps of:

measuring the power of the attenuated untapped electromagnetic radiation generated by stimulated emission in response to the semiconductor diode laser device being driven by the current; and

controlling the optical attenuation of the electromagnetic radiation in response to the measurement of the attenuated untapped electromagnetic radiation.

26. (currently amended) A method as claimed in claim 21, wherein the attenuation of the untapped electromagnetic magnetic radiation is optical, and further comprising the steps of:

measuring the power of the attenuated untapped electromagnetic radiation generated by stimulated emission in response to the semiconductor diode laser device being driven by the current; and

controlling by a predetermined amount the optical attenuation of the electromagnetic radiation in response to the measurement of the attenuated untapped electromagnetic radiation.

27. (currently amended) The method of claim 21 further comprising calculating a threshold current point for the semiconductor diode laser device by using the calculated slope efficiency.

28. (currently amended) The method of claim 27, wherein the current driving the semiconductor diode laser device includes a bias current and further comprising adjusting the bias current in response to the calculated threshold current point.

29. (currently amended) The method of claim 22, wherein the current driving the semiconductor diode laser device includes a bias current and further comprising the step of adjusting the modulation current in response to the measured slope efficiency.

30. (currently amended) The method of claim 28, further including controlling an extinction ratio for the semiconductor diode laser device by controlling the bias current in response to the calculated threshold current point.

31. (currently amended) The method of claim 29, further including controlling an extinction ratio for the semiconductor diode laser device by controlling the modulation current in response to the measured slope efficiency.

32. (currently amended) A slope efficiency measurement apparatus for a semiconductor diode laser device, the apparatus comprising:

a current driver unit coupled to a control unit, the control unit being arranged to alter the magnitude of a current generated by the current driver unit and arranged to drive the semiconductor diode laser device;

a tap for tapping a predetermined percentage of electromagnetic radiation the semiconductor diode laser device is adapted to generate by stimulated emission in response to the current generated by the driver unit;

a power measurer for measuring the power of the tapped predetermined percentage of electromagnetic radiation;

an attenuator for attenuating untapped electromagnetic radiation the semiconductor diode laser device is adapted to generate by stimulated emission in response to the current generated by the driver unit; and

the control unit being arranged to calculate the slope efficiency based on the magnitude of the alteration of the current and the measured power of the tapped predetermined percentage of the electromagnetic radiation.

33. (previously presented) An apparatus as claimed in claim 32 wherein the current is a modulation current signal and the control unit is arranged to alter the magnitude of the modulation current signal by at least about 5% of the magnitude of the modulation current signal prior to alteration thereof.

34. (previously presented) An apparatus as claimed in claim 33 wherein the control unit is arranged to alter the magnitude of the modulation current signal by between about 5% and about 10% of the magnitude of the modulation current signal prior to alteration thereof.

35. (currently amended) An apparatus as claimed in claim ~~31~~ 32 further including a data source for applying a data signal having a data rate to the laser device and wherein the control unit is arranged to (a) derive a modulation current signal for altering the magnitude of the current the control unit is arranged to apply to the semiconductor diode laser device, and (b) altering the modulation current signal with a sinusoidal component having only frequency components outside the data rate of the data signal applied to the semiconductor diode laser device.

36. (currently amended) An apparatus as claimed in claim ~~31~~ 32, wherein the attenuator is an optical attenuator, further comprising a further power measurement unit for measuring power of the optically attenuated untapped electromagnetic radiation; and the control unit is arranged for controlling optically attenuation of the untapped radiation in response to the measurement of the optically attenuated untapped electromagnetic radiation.

37. (currently amended) An apparatus as claimed in claim ~~31~~ 32 further comprising an optical attenuator for optically attenuating, by a predetermined amount, untapped electromagnetic radiation the semiconductor diode laser device is adapted to generate by stimulated emission in response to the current signal generated by the driver unit.

38. (currently amended) An apparatus as claimed in claim 32 wherein the control unit is further arranged to calculate the semiconductor diode laser device threshold current point by using the calculated slope efficiency.

39. (currently amended) An apparatus as claimed in claim 38 further including a bias current driver unit for the semiconductor diode laser device coupled to the control unit; wherein the control unit is arranged to adjust a bias current generated by the bias current driver unit in response to the measured threshold current point.

40. (currently amended) An apparatus as claimed in claim ~~31~~ 32 wherein the control unit is further arranged to adjust the current the drive unit ~~supplies~~ is arranged to supply to the laser device in response to the measured slope efficiency.

41. (new) The apparatus of claim 32 in combination with a semiconductor diode laser device.